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FINE NEEDLE ASPIRATION CYTOLOGY OF BREAST LUMP IN T.U. TEACHING HOSPITAL

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ABSTRACT

This is a retrospective study of fine needle aspiration cytology of breast lesions performed between May 1998 and April 2000. During this period, a total of 2001 fine needle aspirations were done in the Tribhuvan Universtiy Teaching Hospital (TUTH), of which 470 (23.48 %) were of the breast. Fibrocystic disease found to be the most frequent and was diagnosed in 183 cases (38.9%). Fibroadenoma was the third common pathological condition, numbering 61 (12.9%). Malignant conditions of the breast were 72 cases (15.3%).

During these two years, histological diagnosis was available in 154 cases. Histological examination revealed benign conditions in 74 cases (48%), malignancy in 59 cases (38.3%) and inflammatory & lactational changes in 21 cases (13.7%). Out of these 154 cases, 71 cases had also undergone fine needle aspiration cytology. The 36 cases diagnosed as benign cytologically, 34 cases were also benign histologically, whereas 2 cases turned out to be malignant. Out of 37 cases that were histologically malignant, on cytology 35 cases were diagnosed as malignant. The sensitivity and specificity of cytopathological diagnosis for breast lesions was 100% and 94.6% respectively. Inflammatory lesions correlated well cytologically and histolgically.

FNAC is a safe and rapid diagnostic method for evaluation of various lesions. However, there are possibilities of false negative and false positive results because of wide range of appearance of breast lesions.

Key Words: Breast lumps, Fine Needle Aspiration Cytology, Benign Lesions, Malignant Lesions, Histopathology and Correlation.

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INTRODUCTION

Breast cancer, one of the commonest cancers of the females and is also the leading causes of morbidity and mortality in females. The incidence of carcinoma breast is high in USA, North America and northern Europe and low in most Asian and African countries.

Fine Needle Aspiration Cytology (FNAC) has been found to be an extremely useful means of diagnosing palpable lesions of breast. Due to its simplicity, FNAC allows immediate diagnosis and relieving the anxiety associated with waiting for a report and permits, planning for definite treatment. Some benign and inflammatory lesions can be diagnosed easily so that surgery can be avoided in such cases whenever necessary. The sensitivity of FNAC in the diagnosis of breast cancer in general is 72- 99%, but this is lesser in cases of invasive lobular carcinoma, smaller cancers and ductal carcinomas in situ. The specificity is 98-100%. The diagnostic accuracy depends upon the skill, experience, preparation and reading of smear. Here we present our experience with FNAC and histology in the diagnosis of breast lesions.

AIMS AND OBJECTIVES

1. To get acquainted with the techniques of FNAC in breast lesions.
2. To evaluate the accuracy of FNAC in the diagnosis of breast lesions.

METHODOLOGY

Study Design

Descriptive retrospective case study.

Study Area and Sample Subjects

This case study was done at TUTH. Sample subjects were collected from the registers of pathology department of TUTH from May 1998 to April 2000.All female breast lesions were selected as sample subjects.

Data Collection

Data were collected from registers of FNAC and histopathology. The total number of FNAC done for female breast lesion was 470 and histological data was available in 154 cases of breast lesion. Seventy-one cases of breast lesions underwent both FNAC and histological examinations in the hospital.

Procedure for FNAC

In the patients subjected to FNAC in the pathology department, aspirations were performed on the breast lump using a 21G needle after fixing the lump with one hand. Some smears were air-dried and few were fixed in 95% alcohol. These were stained by Giemsa and Papanicolaou stains respectively.

RESULTS

Table No. I : Distribution of cases on FNAC

Table no I shows that the predominant of breast lesions are benign i.e. 286 (60.85%) followed by malignant lesions.

Table No. II : Distribution of various benign lesions on FNAC

Table II shows that fibrocystic disease is the commonest benign lesion followed by fibroadenoma. The least common condition was found to be lipoma.

Table No. III : Distribution of various inflammatory lesions

Abscess is the commonest inflammatory condition followed by acute / chronic mastitis.

Table No. IV : Distribution of various malignant lesions

Table no IV shows that among the various lesions IDC is the commonest (14.04%).

Table No. V : Distribution of various other lesions

Table no V shows that few ductal epithelial cells were aspirated in 48 cases and galactocele in 15 cases.

Table No. VI
Cytohistologic correlation of cases diagnosed as benign / malignant cytologically

Sensitivity – 100%
Specificity- 94.6%

DISCUSSION

Cancer is one of the major causes of morbidity and mortality in the world. An earlier study conducted in T.U. Teaching Hospital by Manohar et.al.[1] between April, 1991 to Dec, 1998, showed that carcinoma breast was the 3rd most common cancer (11.74%) in females of Nepal preceded by cancer cervix (20.66%) & stomach cancer (12.09%). Therefore it is necessary that breast lesions are screened and accordingly treated in time. Fine needle aspiration cytology of breast plays a vital role in this regard. The use of FNA for diagnosis dates back to 1930 with a report by Martin & Ellis[2]. By 1968, FNA of breast had become an accepted diagnostic procedure in Sweden and was beginning to become accepted in United States. Compared to histopathology this is a relatively new procedure.

FNA of breast is used as both as a screening and a diagnostic test. This study shows a sensitivity 100% and specificity 94.6% for FNAC of breast lesions. The average sensitivity of FNAC of breast is 87% (72-99%) and specificity is 98 - 100% in the literature.[3,4]

Wang and Ducatman[5] diagnosed positivity for malignancy of breast in 76 cases cytologically. Of these 99% (75) were diagnosed as invasive carcinoma and 1% (1) was found to be lobular

carcinoma in situ, histologically, resulting in a sensitivity of 100%. It must be emphasised that the ultimate diagnosis however may be possible only by histopathology. It is likely that the high sensitivity and specificity in this study is probably related to the selection of selected cases i.e. out of 470 diagnosis on FNAC correlation was done only in 71 who underwent histopathological examination in this hospital. At the same time, efficiency and proper diagnosis also depends upon the optimal, proper sampling of the lesions and good interpretive skills of the cytopathologist.[3]

Though this facility of FNAC is not available in many part of Nepal, T.U. Teaching Hospital is one of the tertiary referral hospitals in Nepal where FNAC and histopathological examination are done. Patients from the TUTH and other hospitals are referred to the pathology department for this procedure. Hence, this data can be assumed to provide a rough national estimation of cases, though this is obviously not a complete representation of the cases in the entire country.

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